

Field Trip No. 5

Cunnamulla, Charleville, Clermont, Rockhampton,
Beloele, Brisbane, Sydney.

26/9/1940 - 27/10/1940

R. H. L. Key

Fifth Field Trip. 167

26/9/40 - 27/10/40.

Cumana, Charleville,
Clermont, Rockhampton,
Bilola, Brisbane, Sydney.

[C 1702?]

637

Naked (?)

Nyngan - Bourke. 1900. patch ~~on~~ on top of rise.

"Silver box" now dominant. ~~Som~~ Kurrajong numerous.

Spars occasional since Nyngan. large tree, possibly ^(sometimes w. ~~large~~)

white wood, ^{oagidga} common. Silver box / dominant.

on rises, poplar box in hollows. Country undulating

from ca. 19 miles.

Coolabah, 47 miles. Sudden appearance of ^{small patch} uniform stand

of *Angophora melanocylon* ^{of} *Angophora* sp., both big trees & undergrowth. 1 Tapeoba.

More mainly *Bristida*. Red, somewhat gravelly soil.

(4ms SE of ^{Acacia aneura (?)} patch on red sandy rise. Chief grass

Aulphipogon strictus
Bristida arenaria. From here to 6481 milga was

commonly met with as a constituent in the box-

acacia-*Eremophila* association. Pine was prob. not

seen after Coolabah. From ca. 20 miles out of Nyngan

the vegetation was essentially the same (i.e. the trees
boxes, *Eremophila* spp. & the various *Acacia*s. addition.
(somewhat thicket)

6481 milga & belah came in, suddenly here, with
(only one seen)

current-bush & very occasional leopard wood. Box

also present, but subsidiary. Soil 3. Low veg.: various

forekey plants, esp. G? *paradoxium*, & occasional

shrubby saltmarsh (not old man) (spec from 6485)

6485 C term. from 100 m to occasional adult

quite numerous, ca. 5/sq. yd. in places.
 6486 (3 miles from Bourke) Very suddenly enter light
 grey self-mulching flooded country with pure stand
 of coolibah. At transition there is a sudden fall
 in level of several feet, which coincides with
 soil seq. change. This transition was preceded
 by ca. 1/2 mile in which numerous *Eremophila* ^{*Eremophila Sturtii*} is
 full flower were added to wilga association. A
 few coolibah had invaded the fringe of the wilga-
Eremophila zone.

6487 A gradual rise in level led back to wilga
 association through a narrow scalded zone.
 Alternations & intergrades between scalded wilga continue
 till 6488, when very heavy self-mulching, at first with
 a few coolibah & then *Truelars*, is entered. This was
 almost immediately interrupted for 0.2 mile by a
 bare clay-pan. Others could also be seen
 scattered about the plain (10 ms. from Bourke).
 Veg. of plain consisted of green rolling *pollies* & *Basovias*,
 & dead ^{diest} *Truelars* of other kinds. *Truelars* plain with
 numerous clay-pans continued until 92.5 when
 coolibahs returned rather thinly, & more thickly in
 patches, till Bourke. (99).

3/69

These sequences confirm the earlier view of the relation of heavy country, clay pans, mulga & box-pine or box-*Eremophila*. Mulga country is clearly intermediate between box-pine & heavy, while clay-pans are low rises occasionally swept by the floods. Mulga country may possibly be due to the movement of surface sand over heavy country under influence of wind. Clay pans might then be of same nature, but surface layer so much shallower that it is readily removed.

1/10/40. Bourke 6500. Deviated from main road ca. 3 miles at N. Bourke. Immediately after crossing Darling one encounters red country of scalding type, with gidgera. At 516 this gives way to light grey self-mulching soil, in parts with dense covering of large iron (?) stones (laterite?) & coolibah. ^{Paradoxonium} *Bassia* / *man* herbage. ~~from~~ From here on light grey self-mulching with coolibah alternates with iron brown to red rises carrying gidgera.

Site 1 522 miles. Red rise, some stones. Gidgera. *Apotrois* sp., *Austrocyathus interioris* ^{interioris} ~~proctori~~ mulga on Photo of pure stand Gidgera. Spec. *A. proctori* The highest ground well off the road to the left.

523. Site 2. Swamp: light gray self-mulching
 large tufts of *Eleocharis acicularis* (sample) No *Rustia* seen.
 5m Shrubby saltbush on right on light brown dusky
 soil with ^{sparse} *Gidcea* & other *Acacias*.

Site 3
 525. Red sandy soil on rising ground. Great
 mixture of trees & shrubs including. *Poplar*, *box*,
mulga, *mulga*, *leopard-wood*, *sandalwood*,
Hakea ^{*leucophaea*}, & other *acacias*. *Monisaguthulosa*
Hakea, is added to the mixture.

529. A *Cosmaringa* ~~is added~~ is added to the mixture.

530. Site 4. Red ~~stone~~ stony. *Poplar*, *box*, *mulga* &
 small bush, 3ft. high (specimen). *C. tenu* quite
 numerous as hoppers & adults.
Thryptomene sp.
Grevillea striata (leafwood)
Acacia excelsa (ironwood)
Alstonia constricta

550 From 524 - 553 all red country.

553 - Watercourse country with *coolibah* &
 medium-dark gray self-mulching soil alternating
 with red sandy country with same veg. as previously.
 but *mulga* not noticed. One or two pine. True
Muddah occasional. *Eumyonia* at 564. After 568,
 lignum in places. Watercourses sometimes
 fringed with *Gidcea*.

568 Continuous medium-dark gray self-mulching
 till 577. *Coolibah*.

577 - 581 Alternating watercourse & red.

581-588 (Barrington) All heavy, coolibah or ^{brake} ~~brake~~
 some scalded reddish rise. 588-604 All
 heavy gray to brown, with coolibah. 608-611, same,
 but alternating with several red patches, mostly
 very sandy, bearing bon-pine as usual with pine
 prominent. 611-634 almost treeless plain, heavy
 gray or gray-brown with numerous reddish to
 red clay-pan like patches, bearing a ^{few} small
 acacia-like trees (presumably ~~white~~ ^{white} ~~wood~~) toward
 the edges. One hoopart-wood also seen.
 634-5 + 639: Sandy bon-pine ridges, sometimes
 returning to coolibah via gidgea.
 643-5. large red ridge, stony this time with
~~some~~ gidgea leading up to bon & then mulga
 rather small trees. ~~644~~ ⁶⁴⁵ 646 large ridge commencing
 very sandy with pine & leading to less sandy
 brown stretch with bon, buddah & gidgea. Pine,
 etc. returns at 648-652, bon in lower area,
 few odd mulga. 652 returns to light gray coolibah
 656 another pine-bon ridge with mulga rather
 acacias, giving way to mostly gidgea on brown
 soil to within about two miles of Cumamulla.
 Reviewing the stretch from Bourke to Cumamulla,

The following points stand out:-

(1) No saltbush was seen anywhere except a small patch a few miles from Bourke. The herbaceous cover was mainly Aristida spp. on the red country, & rally-polly, prickly dicots, etc (not Mitchell grass) on the heavy.

(2) There was no indication of a definite patch of acacia scrub, no brigalow at all, in the position marked on Prescott's map.

(3) From the Darling to ca. 11 miles short of Emuonia was all red, mostly stony, country, with a great mixture of trees, apparently intermediate between box-*Eremophila* & mulga country.

(4) From Emuonia to Curr. mainly heavy grey soil with coolibah or treeless, but with occasional red ridges, mainly ^{heavy} sandy, with pine & box, & occasional scalded light brown to red ridges, usually fringed by ~~intolerant~~ ^{a small tree}.

(5) From watercourse to summit of ridge, the ^{in this region} succession ^{fundamental} appears to be: coolibah, gidgera, poplar-box, pine or mulga, with other small trees, esp. ironwood supplyack.

Stock Inspector at Cumamulla said that swarms of young hoppers were noticed round about the police station in St. George in April 1940. John Jackson at St. George could give information -
Mr. Coll. Report of swarms round and-springs ca. 20 miles W of Enlo, "Carpet Springs", on the Yoak River about October 1939.

Gilnath Plains. Cumu - G.P. Alternating heavy soil, more brown than grey, and light red ^{sandy} ridges, the former predominating. Gilnath itself has many types of country, ranging from heavy grey brown plain with Mitchell grass, through gidgea to bon + pine with ironwood, *Eremophila longifolia*, *Eucalyptus*, etc. *Eucalyptus acuminata* (Quondong) *Eremophila*, *supplejack*, etc. Whitewood rare. Bloodwoods present on fairly sandy areas. There are also some very sandy red patches with *Grevillea junifolia*, *diarist oak*, *Triodia Mitchellii*, *spinifex* (*Triodia Mitchelliana* (?)) ; ~~and~~ stony mulga leopard-wood occasional. *Gutierrezia* country; and some cane-grass swamps. ^{sometimes} replacing poolbah.

Cumu - Charleville. Cumu. 731. Till about 745 mainly brown heavy soil; heales or with poolbah, alternating with ~~assorted~~ clay-pan-like reddish rises & sandy ridges with bon-pine, etc. Whitewood was very soon found as frequent on margins of caldes

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Oreania acidula (cumm-apple?)
Eremocitrus glauca

areas. from ca. 745 heavy country became rare,
and the light country less so. Pale reddish sandy
or scalded areas alternates, the former with mainly
pine, ironwood & bloodwood, the latter fringed by box &
whitebark (photo of rather large whitebark fringing
clay pan at 752). 760-768. Coolibah & bloodwood country,
light grey ^{fairly} heavy ~~to~~ and a great deal of hard to scalded
pale coloured country, more or less 2-4, similar to
Simmons'. Bloodwood best dev. here. 768-772 back to
the heavy brown alternating with 4b. At 770 was
seen the first leopard-wood ^{*Kindersia maculosa*} & whitebark fringes to
clay pans. 772-5 back to light-coloured coolibah &
hard light reddish box. This continues along the road
with only three very small patches of heavy self-
moulting brown, as far as Myandra (6799), the Coolibah
becoming more & more scarce. The light country is
mainly pale, no good red, varies from par-pine to box.
Myandra - 6803, light hard country, Moreton Bay ash, box,
bloodwood, 803-816. Heavy brown self-moulting alternating
with clay-pan rises. 816-18 hard sandy ridge, box, pine,
M.B. ash, bloodwood. 818-21 heavy brown & clay pan.
821-5 hard light. 825-9 short term alternations of
pale hard, clay-pan & heavy brown, mainly first two.

829-836. Pale hard & sandy, with bon-pine, M.B. ash, bloodwood. 833, two mulga. 834 a few mulga. 836-840 alternation with clay-pan country lined with gidgee. Watercourses off road. 842. Red sandy country with mulga & bon alternations + intergrades. *Acacia aneura* (?) *Petrophila sessilis* (?) *Acacia excelsa* (?) *mulga* plant species. 847 almost pure mulga. 2 photos *Petalostyles labicheoides* *Cassia* sp. aff. *C. pleurocarpa* * Well soil sample. Mulga, with certain amt. of bon admixture. Continues for ca. 9 miles, & is then succeeded by a stretch of several miles of mallee-ironbark, dead oak & spinifex. At 6863 this in turn gives way to pale sandy bon-pine M.B. ash, etc. - to Charleville, 6868.

Summing up on Cummarulla-Charleville stretch: -

- (1) Of the region shown by McTaggart as mitchell grass downs, only ca. $\frac{1}{3}$ is ^{alternating with clay-pan} heavy brown self-mulga. ^{pale,} The rest consists mainly of hard, sandy to very sandy, ^{M.B. ash bloodwood} bon-pine country & ^{mini} pale psaltered type of country with mainly bon. ^{Mulga & mulga both of the} absent.
- (2) Mulga country begins 20 miles S of Charleville, ^{ca. first} but only half of this stretch is mulga-dominant. Remainder is ironbark-spinifex & bon-pine, etc. (ca. half of each)

Mr. McTaggart at Charleville informs me that

[illegible]

Some of the "bigalow" between Morven & Mitchell
is Acacia stenophylla, other is true A. harpophylla.

and the plain, valley, fully 1000 ft. above
 as shown on map. We then go on at Fort Chitt
 with government supply road all back the
 distance. This plain is about 10 miles
 square.

Summary of observations on Mitchell: -

- (1) From Charleston to Mitchell: -
 The country is all light sandy
 dry, no rivers or creeks, no grass, no trees appear
 from the map, 400 ft. mountains for Charleston.
 No gravel first appeared at 35 miles from Ch. is at first light.
 (2) The top of the mountain for about 12 miles at
 Morris - prob. contact for mountains beyond, also
 much of the country from 10 miles after Morris to
 Mitchell. Most of the country is then sandy.
 (3) There is no clear line between the 15
 open forest - b. grass - the "prairie" on the map. The
 appearance is in proportion to the position of the forest
 extending right to Charleston.
 (4) The plain 100 ft. of Mitchell is not shown on
 the 15 map.

(6990) Mitchell - House: 710-725 feet to which had to
 dig down, but in 10 ft. of the plain

The fossils are all large and small, from
 the size of the thumb to 2 or 3 inches. In the
 fossils the most common is the large one, and
 the small ones are the most common. The fossils
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Guiera parviflora

- 226 alternations of brigalow on bulsh choc. & greasy
 223 = *Dulacca*
 bon / 226 - 236 pure bbw., very tall from ca. 231. 236 -
 238 alternations with bon on greasy leading up to
 bon on hard at Drillham (238). 240 - 250 hard purple-
 red with ironbark milt. oak pine, occasionally
 more sandy, with pine, *Angophora lanceolata* sugar-gum & ironbark.
 251 Miles, on pale sandy bon.

Summary, Roma - Miles. - (Roma to Wallumbilla
 would seem mod. fav. for milt. though many of the
 alternations are on the large scale. (2) On the Wallumbilla
 Miles stretch, there is one small stretch of alternation
 around Jackson, another, of 4 miles, round *Dulacca*.
 This is followed by 10 miles of brigalow-belah, and a
 third patch of alternations (2 miles) just W of
 Drillham. From there to Miles, and elsewhere from

Miles to Wallumbilla, the country is hard & sandy, & quite unsuitable.

Mr. Ford, S.I. at Miles, said that the swarm reported from Dulacca in 1939-40 was preceded by reports some weeks earlier of locusts being unusually numerous. The property concerned was in the belt of alternation. So was another property ^{S of Wiatuma} ~~at~~, and the third also, at Condamine. All this country was under pear 10 years ago, and development by raiging & clearing dates from 6 years ago & is still continuing.

(7252)
Miles to Wandooan: 52-78. hard purple-white & purple-red, some sandy, with ironbark, pine, ^{Angophora lanceolata, at least in part (certainly on sandy)} dogwood & sugar gum (spotted gum?), with occ. small patches of box-loodah on sandy, hard & greasy. 78-81 alternations of ironbark hard, hose-greasy & brigalow luhah on b. choc. in ca.

equal props. 81-86 alternations of ironbark & box with only very small patches of brig. (but road runs near creek: more brig. could sometimes be seen in distance on left of road. 86-89 alternations of box & ironbark only. 89-99 (Wandooan) Alternations

of brigalow, box on mod. sm. grey, & a little greasy box, brig. The most prominent. Very little of any country in this stretch is cleared, though a little is rung.

Wandoo (299) - Taroom: - 299-311 B.b.w. all the way with few small stretches of box on mod. sm., & greasy.

311 large leguminous deciduous tree (*Bauhinia*?)

Catanop, sp., *Calidia*, *Troglodytes*. 311-338 (Taroom) medium term alternations of brigalow (sometimes with some belah), brigalow - *Bauhinia* in a parkland assoc. on belah choc. or somewhat lighter (frequently with some whitewood; the brigalows spreading tree), box on mod. sm. or greasy, & ironbark on hard to mod. sm. The brig-belah & brig-Bauh. are dominant. There are 2 or 3 small open stretches with heavy choc. sm. & dense grass (not mitchell). Sample of *Bauhinia*, at 312, & of another tree appearing ca. 2 ms. from Taroom.

Mr. Brown of Wandoo, S.S. agent, said that between Wandoo & Taroom was virtually all brigalow except for an average of ca. 2 miles on either side of the creeks which consisted of box flats. He drew the limits of this country on the map. Outside it was mainly "forest" i.e. ironbark, etc. Located from Miles to Taroom about 4 ms. 1939.

(7337)

Taroona - Kallatou: First 2-3 miles Coolbats on dark grey sm. along Dawson River. Then brigalow, *Banksia* & another tall tree (sample) Some open spaces. 7344. Photo 12, roll 2. Box, brig. Bank, tall tree, open space. *Gynerium* & *Polypodium* slightly on with excellent heavy ~~and~~ alternations. to grassy. This continues till 47 & 47-52 alternations of Coolbats on sm. dark grey, and (mostly) hard to greasy country along creek. 52-54 box-brig. Bank. parkland, soil alternations from black choc. to fine pale red. 54 creek with Coolbat-like tree on dark grey sm. 55 dense bbw (wilga is present in most of the assoc.) 56 dense brigalow-wilga - cotton trees (these have been occ. in the heavier country from Miles.) on rather light choc. This continues till ca. 59, with good alternations of lighter country. 59-71 mainly light, hard or sandy country with wattle, box, pine. Occasional ^{small} patches brig. on light fine choc. or reddish, as at 66-67, & 69. Froggattia could be heard from time to time all along the road from Miles. This wattle-box country is well grassed, even without ringing (a subtropical open forest) *Anatasis gutt. r. prox.* seen at various points from Miles in long grass. *Specs.* at 7377. 7379 *Didalium*. *Aristida Caput-medusae*; *Petalostigma quadriculare*

I miss the road at the Liddy Creek turn-off
 & reached Coorada via R.C. Forest Country all
 the way. A large brown-barked gum with
 large leaves (^{prob. *E. Blasonae*, though it may be *E. acuminata*} yellow-jack) found in the
 hollows, with rather low *Themeda*.
 (7440)

Coorada - Kalleaton: Same to 46. Then a few
 patches of brig.-b.w. come in, also the ironbark
 grows on quite heavy sm. choc. as round Stoneloft.
 From Stoneloft ⁽⁴⁸⁾ alternations of light & heavy sm.,
 the latter with either ironbark ^{or other gums} for b.b. from ca. 56
 heavy sm. red. choc. with ~~rather~~ open forest of ironbark,
 bloodwood & another gum. Dense grass 2-3 ft. Giant
 blue (?) & kangaroo acacia. This marks a definite
 change towards downs country. A. gutt. numerous.
 Occasional somewhat lighter stony rises. Found
Didymopanax on one at 62. Prob. mod. fav. for ovip. of
 Chost. 63 Brig. Bark. tree (8 spec.) King pear. 65-70
 Brig. Bark. - box parkland (very heavy between trees)
 alternating with harder areas w. box, & occ. with
 ironbark. 65-76 mainly ^{with *Bauhinia*} hard brig.-belah-box.
 Photo 2 (roll 3). ~~*Bauhinia*~~ downs 74-76.. 76-85 (B. Downs)
 rather long term alternations of ^{very} heavy sm. downs richly
Bauhinia & heavy or hard b.b.w. & firm box.

(7485)

(7538)

B. Downs to Kalliston: This sketch was not noted in detail. From B.D. to the Expedition Range there were alternations a few miles of *Bauhinia parkland* followed by alternations of bb on sm. choc., bon on firm, ironbark on sandy. The range was covered for a distance of several miles with ^{*C. Blomsonii* or *C. peltata*} ironbark, yellowgick, bloodwood, etc. Between the & Kalliston were more medium & short-term alternations of bb, bon on greasy, and, from ca. 9 miles out of Kalliston, *Bauhinia downs*, myall on heavy sm. grey, & bon on greasy. There were also some patches of rich red loam, which would be classed more or less as firm. On the whole, with the exception of the range, the alternations here would seem fairly satisfactory, but much of the country was only slightly ^{logged in Kalliston} cleared or run over ^{year (1934), also previously.}

Summary, Miles - Kalliston. - (1) The first section from Miles (first 26 miles) is quite unfavourable. It is followed by ca. 8 miles of app. fav. alternations, then by 10 miles, which is too uniformly heavy, to Wandoan. McTaggart shows mixed brig. open forest. (2) The first 12 miles N of Wandoan were also

app. too uniformly heavy. The rest of the distance to Taroom had slightly better alternations, but still too little light country. The latter is concentrated along the creeks, for ca. $\frac{1}{2}$ mile on each side.

(3) 20 miles N of Taroom had excellent alternation of heavy (b.b.w. + b. Bauh. ~~etc.~~) & light. (4) The next

42 miles are quite unfav., being heavy forest on light sandy to greasy soils, but not hard like that N of miles. Grass mainly of wire-grass type.

(5) Then ca. 8 miles of fav. alternations; 9 miles of too uniformly heavy, but with small light areas; 5 miles of app. fav. alts; 11 miles of prob. too ^{light} _{to B. Downs} big. - belah-bon; about 9 miles of prob. fav. alts. h

(6) Finally, from B. Downs to Rolleston, with the exception of the Expedition Range, there is prob. a fav. alternation. (7) Thus there are three main ^{along the road} ^{a stretch of} areas of fav. alts: (a) ca. 8 ms. ~~between~~ ^{a stretch of} ca. 10 ms. S of Wandooan, (b) ca. 20 ms. N of Taroom, (c) from ca. Stonelcraft to Rolleston, fav. stretches common. Expedition Range excepted.

The great majority of all this country from Miles is unsung or only partly sung. Clearing would undoubtedly increase favourable areas. Saw no spinifex on Expedition Range.

(7538)

25. 191

Collector - Sprague: Bigelow & Coolidge for first mile.
then open downs on dark gray-black sm., very slightly
undulating, with occasional clumps of trees,
^{bl.} ^(C. melanophylla?) high iron bark bloodwood or ash. 45 widely scattered
^{bl.} iron bark on same country. A very small firm red
patch here, suitable for ovip. Chem. adults more
^{adjacent to} numerous on plain here than yet seen on trip.
Hoppers uncommon. Orthocentrus hoppers on the firm
patch. 47-48 firm greasy with iron bark, etc. bordering
a creek. 48 back to open downs with patches timber.
A. gutt. numerous in the grass tufts of 2 ft. This continues
7549: Moraba cultrata cultrata (R).
till 55, with the same occ. firm rises. 55-58 more
equal alternations of heavy sm. & firm red on rise,
the two merging gradually into each other. Open
tufts of eucalypts, with occ. small spaces. 58-60
red rise, starting with red loam with iron bark,
rising to brig. on light and box-walga on pale
hard. 60-64 black sm. at first with savannah eucalypts,
then almost treeless. 64-65 red ridge with box & brig.
on firm to hard. 66 another sm. plain. 67-68 microalternating
^{to grass} of heavy sm. & greasy on rise to range. 68-73 hard/box
leading up to hard v.l. iron bark. ~~tobacco~~ wood, sugar gum,
yellow-jack. 73-84 Volcanic basalt mountains topped

with harder horizontal strata, giving rise to a rich
choc. soil, varying from ^{very} ~~very~~ ^{mod.} ~~mod.~~ ^{fine} to fine,
occ. red patches. Reminiscent of Warrumbungles,
but much less red & light country. Springs at 84.
(586)

Springs - Emeralds: - 86-92 excellent microalts of
heavy sm. choc., fine choc., greasy ^{mainly charred} wood. 92-3 bon-wood
huddled ridge on hard with brig. on fine brown. 93-
604 medium-long alternations of choc. black sm.
plain with groups of iron bark & bloodwood & hard,
sometimes sandy bon-brig. on pale to red. 604-607 Hard &
sandy ^{pale} a very little greasy pale brown, bon-huddled-
milga w. occ. brigalow trees. 607-608 Heavy sm. plain
with groups & individuals of bloodwood scattered about.
609-610 Pale brown sand with bon & ash. 611-12 micro-
alts. of sm. choc., fine choc. & red, & ash pale. 612-15 heavy
black sm. Aust. gutt. particularly numerous, ~~also~~ also
present (1 seen). A small wattle seems to extend the
furthest of any tree or bush on to the open plain. 615-17
brig. & the other decid. tree like baobab on heavy sm.
choc. 617-28 (Emeralds) Alternations & intergrades of
timbered country, greasy choc. to hard & sandy with
great variety of trees: brig. dom. on heavier parts,
with bon, whitewood, blackbutt ^{C. Cambageana} (?), baobab, tree like
baobab, etc.

(7698)
 Gently rolling with Coolibah
 Clement - Emerald : 698 - 702 Alternations of black soil
 & hard & greasy hon. 702 - 4 box-coolibah on greasy to
 slightly sun. brown. 705 - ²⁸ very heavy sun black-choc.
 with dense pasture ca. 2-3 ft. of mainly blue-grass,
Panicum queenslandicum *Panicum decompositum*
 a panicum (?) & a Sporobolus (?) & another grass. The
 rises are more choc., the depressions more black,
 rises are lightly timbered with eucalypts,
 mainly small bloodwood & a blue-leaved sp., also
 occ. *Banksia Hooker*
 small acacias, very occ. odd brig. & banksia. Hollies
 may have tea-tree. One or two of the rises have a
 very small, but quite inflexible area of "firm".
 28-32 Alternations of the same heavy sun with
 several small firm red to brown rises bearing
 mainly bl. ironbark. 32 = Capella. 32-38 Return
 to heavy plain. 38-44 medium-term alts. of heavy plain,
 hard & occ. sandy box, greasy hon & bl. ironbark, greasy
 brig. & sun. choc. brig. & bank. 44-52 Return to heavy
 plain with occ. timber as before. 52-55 Brig. belah,
 bank. etc. on sun. belah choc., leading up to 56-57,
 alts. of this with firm, hard & greasy brig. etc., then.
 57-61 heavy sun & mod. sun. brig. etc. & coolibah (round crown)
 on heavy sun & a little slightly sun. 61-64 mainly heavy
 plain with a few patches of greasy-hard reddish

28 194

with brigs & bon. 64-66 (Emerald) hard-sandy with
box & a few ash.

^{Springare}
Summary (a) Kelleston to ~~Clemont~~: - (1) first 17 miles mainly
heavy sm. plain, with firm areas small and few, but
not altogether absent. Not fav. for mult. (2) The next
13 miles show a fav. short-to long-term alt. of heavy
& firm-light. (3) Then follow 5 miles of uniformly
light, timbered, more hilly country. (4) Finally
11 miles of shallow volcanic soil with prob. fav.
alts. from heavy to firm.

(b) Springare-Emerald: - (1) first 26 miles ~~seems to~~
have fav. alts. of various degrees, some short, some
long. (2) Then comes 5 miles of uniformly heavy,
& (3) 11 miles of light-grassy without heavy alts.

(c) Emerald-Clemont: - (1) first 14 miles have mainly
long term alts. of heavy & light, prob. not very fav. for
mult. (2) 8 miles of heavy plain (3) 6 miles of medium-
term alts. (4) 6 miles of heavy plain (5) 4 miles of alts.
of heavy with small firm areas. (6) 23 miles of heavy
plain without effective alts. (7) 6 miles of mod. fav.
alts.

Thus a generally fav. area extends from ca.
29 miles SE of Springare to ca. 26 miles N., with the

29. 195

Smile

exception of a ^{Smile} belt of mountainous country
the SE. Round Emerald conds. don't appear so
fav. Somewhat fav. conds. are met again to SW
of Capella, again Smiles S of Clemont. On the
whole the Springare area would seem the
most fav.

The people at Emerald had seen very few
swarms. Locke, S. & S. agent mentioned an
outbreak of wingless grasshoppers ca. 25 years
ago which held up trains, and a more recent
one, 10-15 years ago, which seemed to be Gastr.
At Clemont swarms had been numerous in
1939-40, but still more so in 1937-38 (according
to S.?) Mr. Copland mentioned an outbreak in
1908 (sp.?)

Chortocites was remarkably uncommon,
wherever looked for. A. gutt. was the commonest
sp., being quite dense in places. The former
areas had mainly Oedaleus hoppers & some
Pezomastix, but none of these were numerous.
Hunger Gastr. nymph was seen between
Clemont & Emerald, & adults. The grass on the
plains was ^{prob.} mostly too dense for ^{adult} cone. zones

for Clem., while the light areas were either
timbered or well-grassed. ~~There~~ more or less
bare areas were very few & occurred on the hard
greasy areas, especially on the top of rises.
Stock don't eat down the rank grass, which
remains much the same in the driest year...
Thus the alternations recorded prob. do not have
the significance they would further S. In view
of the absence of Gastr., it is possible that this
sp. requires sandy plains.

Emerald (7766) - Rockhampton: 66-75. medium term alts of
box on firm to sandy, & brig.-bank. on firm, slightly
sandy mod. sm. black choc. light country dominant.
75-78 Brig.-bank-bottle on mod. sm. ^{very} choc. 78 ^{small} firm-
greasy box ridge. 78-92 (Comet) long-medium term
alts of brig. on heavy, mod. slightly sm. with box
~~also~~ on firm greasy pale brown. "Blackbutt" present
mainly on intermediate soil. 792-810 hard pale
brown & pale red country with box, scattered brig., &
several phyllode wattles (1 sample). 810-14 brig. medium
to short. on firm to slightly sm. brown. 814-29 Box on
hard to sandy pale brown & pale red alternating &
intergrading with brig. on hard pale brown. No brig.

seen after 25. 29-37 more purplish-white ^{bloodwood, dogwood + awa-tle} sandy
 with ironbark, ~~etc.~~ ^{oaky} occ. hon, very occ. pine.
 37 patch of brig. on firm to slightly sm. 41-43 hon on greasy,
 with small patch brig. in centre on slightly sm. 43-48
 alternations of ^{with bl. ironbark transitional} nl. ironbark etc. on hard, then on greasy.
 48-~~52~~ 52 alts of ironbark etc. & patches of brig. on firm
 on slightly sm. 52-59 alts of nl. ironbark, bl. ironbark &
 hon on hard pale purple-white to brown, small patches
 red. 59-73 (Quaringa) fairly dense nl. ironbark,
 with some bloodwood, a little nl. ironbark & ~~some~~
 a little tea-tree-like tree (sample) on hard purple-
 white, brown, & a little red. This is better soil than
 further back. One would expect to find hon, but
 possibly the rainfall is here too high.

The country has been timbered right from
 Emerald, only very little ringing would be mod.
 fav. for mnt. between Emerald & Comet when cleared,
 but between Comet & Quaringa quite useless for Cham.
 Troglodytes heard at various places to ca. 55. *Didalvus*
~~*Phenacomys*~~ also seen at ca. 55. *Didalvus* at Quaringa. Left
 Quaringa (76) hard to 77. 77-82 tall orig. w. some
 banyan on heavy ~~sm.~~ ^{blat} choc. with good melon
 holes in places. 82-84 firm - slightly sm. w. *Acacia*

round creek. 884 - 899 grey ~~pink~~ brown with al
low ~~other~~ gum at first, leading to hard greasy
range country with bl iron bark. Other locs. & a good
deal of brig. scrub on hard brown. Kingpear very
dense in parts, particularly amongst brig. 900 patch
of thicket formed by low trees ca. 15 ft. shades some
creepers, with occ. taller trees. 902 small patch
brig & kingpear on grain - slightly ~~sun~~ ~~dark~~ brown.
906 Cogango. From Duaringa to here all timbered.
From Cogango mostly cleared or naturally thinly
timbered. 906 - 930 alts & intergrades of heavy
dark grey to black ~~sun~~ & firm to greasy. Among
the hills round Cogango the heavy country, which
is somewhat stony, has some bloodwoods
& bl. iron bark (?). Beyond the ranges there ~~are~~ are
a number of patches of brigalow on heavy ~~sun~~ ~~sun~~.
From 930 to Rockhampton () the soil is a more
uniform grey greasy to slightly ~~sun~~ ^{occurs in places} sun. Poplar box
on greasy ~~soils~~ to within a few miles of
R.

Summary, Emeralds - Rockhampton: Emeralds to
Comet has app. fav. alts., but requires clearing.
Comet to Duaringa quite unfav. From Duaringa

for ca. 8 miles prob. mod. fav. alts. Then till
 for ca. 24 miles beyond
 Cogango unfav. Cogango the alts. seem fav. if
 the climate is O.K. From there to Rockhampton
 prob. unfav. Chap at Duaringa said swamps
 appeared there for ca. 3 days ca. xmas 1938 (1937?)
 (7949)
Rock. - Bilocla:- 49-53 mainly sm. dark grey 53-57 greasy
 with bon 57-58 firm to slightly sm. red-brown with bloodwood
 & bl. ironbark. 58-96 hard, greasy, firm & occ. slightly
 sm. brown with ironbark & bon. in mainly mountain
 & hilly country. No good for chem. 96-99 brig. on heavy sm
 choc. 99-8003 brig. - black on heavy sm choc. to firm.
 03-12 bon & other mes. on firm to hard. 812-19 Alts & intergs.
 of b.b.-w-bottle ~~and~~ on firm ^{like Cambageana} greasy & bon-ironbark
 other mes. on greasy-hard. Blacklens also present.
 819-23 both ironbarks. bon & other mes. on greasy-
 hard. 823-24 gums, brig. & baubina on heavy sm choc.-
 black. 24-27 greasy (Jambina) 27-31 brig. - black-bottle
 on firm mod. sm. 31-39 alts & intergs. of brig.-bl. & bon
 both on
 firm - hard. 39-40 open plain on heavy sm. dark grey.
 40-44 (Bilocla) bon & other mes. on firm-hard.
 (8144)
Bilocla - Monte:- 44-60 medium to soft - term alts of heavy
 black - choc. sm. through less heavy to firm & greasy.
 Bon, gums, brig. black, softwood & sm. bl. ironbark. See

more than $\frac{1}{2}$ cleared, with Rhodes grass

~~Sta.~~ 200.

a little brigalow - softwood mixture

Nagel's map. 60-69 mainly soft-wood scrub (62 bottle
trees remaining from cleared soft-wood scrub. photo 6.

Austrocaris very numerous in Rhodes grass. Soil heavy
occ. Hill Country forming S margin of Adelaide Valley open
sun choc & loose red loam. No light soil. 69-73 hbl.

ironbark & some bloodwoods on long down - slope from
native grasses, including blue

hills. Heavy black choc. sm. h. 73-74 box & gum on firm

greasy along creek, followed by narrow belt brig. - sw. c.

black choc. Back to bl. ironbark on heavy sm. black-

-78
choc. at 74 ~~as before~~ 78-81 excellent soft-wood alts. of
heavy sm. ^{as before} & firm & hard red rice with same timber

plus occ. box & gum. 81-86 greasy & hard brown reddish,

with ^{fairly dense} (box, bl. ironbark, ash & bl. ironbark, ~~the~~ leading

upto, 86', close tall forest of bl. ironbark, sugar gums,

other gums on hard brown - reddish in mountainous

country. Top portion, ca. 88-90 rich brilliant red loam,

with signs of principal rain forest among the gums. 96-

202 bl. ironbark, etc. on hard in ~~area~~ hilly country.

199 Small patch of slightly sun. with gum, & some

greasy round about. 202-204 (Monto) box on greasy &

hard. From ca. 198 a creek runs to left of road, &

~~the~~ has sun. soil along its flats.

Summary. Rock - Belcoia :- for ca. first 18 miles, rather poss,

alt. might be gov. if rainfall less. Then for 47 mo. light

mountainous, unsuitable country. The Callido Valley is prob. entered at Ca. this point. Data on the valley may be obtained from Nagel's map. Along the road no. far. alts. do not begin until 4 ms. from junction, & continue to Biloba. Some far. alts. probably occur W of Biloba. According to Daves, the country between Biloba & Theodore & Taroom is mainly open timber except for a narrow belt of dense timber. The swarms last year came NE from Taroom through Craew (?) & Theodore.

(8258) Monte-Eidsood. 58-59 hon on hard 59-63 alts of brig-
catal, gum & box, all on heavy mod. sm. choc. 59-
66 brig. & sw scrub on mainly mod. sm. grey, a small
patch at bet of hon on firm - slightly sm. grey. 66-71
del. ironbark & a little gum & box on short. mod. fern alts
of hard brown to grey & mod. sm. choc. 71-76 short - mod. fern
alts. of firm-hard with hon, ~~gum~~ & bl. ironbark ~~and~~
mod sm. w. brig. & brig-sm. 76-83 hon, gum & both
ironbark on firm and hard, w. a little heavy sm.
along creek at 82. Soil obs. now impossible
owing to light. 85. Up to here the country had been
extensively cleared. From now it was mainly densely
timbered with mes., though a patch of heavy country

along a creek was ~~un~~counted later. Ca. last 17 miles close timber on poor country with wattle.

Summary, Biloba - ^{Monto} ~~Eidsvoll~~ : - (1) The first 16 miles have app. fav. alts. (2) Then comes 13 miles of uniformly heavy (3) About 8 miles of mod. fav. alts. (4) Remaining 23 miles ^{to Monto} are on firm-hard country, heavily timbered, quite unsuitable.

Observations in Monto district - North of Monto, the Thore Moon & Monal Creeks have alluvial dark grey heavy-mud. ^{from} flats for an average of ca. $\frac{1}{2}$ mile on each side, beyond which the ground rises rapidly on hard slopes. This should provide favourable conds. S of Monto is quite a lot of briga low, & a little sw. The swarms of 1939-40 were thought to have entered from the SW, & then to have moved mainly SE.

Very few locusts were to be seen before the invasion.

Summary, Monto - Eidsvoll : (1) Too uniformly heavy for first 8 miles (2) Then fav. alts for 10 miles (3) Then too light, and for most part heavily timbered, to Eidsvoll (ca. 30 miles.)

(8306)
Eidsvoll - Mundubhera : 6-20, mainly ~~rd~~ ^{wh} rain bark & ^{pub C. maculata} cabbage. ^{un}, w. a few areas of hon ^{wh} rain bark. Hard pale. 20-23 alts of box, gum, bl. rain bark & brig. all on firm & greasy pale brown-brown. 23-28 alts. of sw. - brig. rain bark,

bl. ironbark, rhox, all on firm brown stony. 28-30 bon &

bl. ironbark on mod. sm. dark grey.

(331) Gayndah - 31-40 bon & bl. ironbark on

firm - hard brown, often stony, with small patches
big in first 7 miles, & of sw. in ca. first 4 miles - all
on same soil. Country mainly cleared. 40-44 little

cleared bl. ironbark - gum on harder soil, numerous

creeks. 44-49 rich valley with big - sw. on heavy sm.

choc. & loose choc., ^(mainly) & 1/2 sw. only on red loam. Some of this

may be rain forest. 49-51 return to mes, mainly

cabbage & bl. ironbark on brown & tendency to

red, very steep down. 51-52 bl. ironbark & bloodwood

on firm brown ~~soil~~ [we have here a drop from a plateau

app. capped with hard rocks bearing lucca & overlying

soft red stuff wh gives rise in valleys & returns to

sw. or rf., con plain to bl. ironbark on heavy sm.

52-54 bl. ironbark on heavy sm black choc. 54-59 bl.

ironbark & cabbage gum on hard pale & brown. 59-62 (Gayndah)

short - med. - term alt. of bl. ironbark on heavy sm, choc. &

bl. ironbark on hard.

(8364) Murgon
Gayndah - ~~Gayndah~~ - 64-80 med. - long alt. of bon & bl.

ironbark on hard - greasy & bl. ironbark - bloodwood on firm -

heavy - med sm. choc. 80-86 Hard greasy pale brown w. bon &

~~86~~ nl. ironbark. 86 as patch of heavy sm. grey w. bon &
 gum 87-89 nl. ironbark then on hard - greasy pale brown.
 89-90 big sw. on heavy sm. choc. ~~to~~ loose choc. & fine
 pale brown. 90-91 nl. ironbark - ^{pal. C. maculata} cabbage on pale
 hard. 91 another very small patch of big. - sw. 91-96 nl.
 ironbark & ^{C. maculata} cabbage on pale hard. Cree k to right of road
 prob. with heavy soil on flat. 96 Depression with gum,
 fine - mod sm. grey soil. 396-402 alts of bl. nl. bon on
 pale hard with gum on various degrees of sm. from
 heavy upwards, owing to road following creek.
 402-418 alts intergo. of hard, fine & heavy sm. choc.
 w. mainly bl. ironbark, also nl. ironbark & gum. No
 bon since 89, but enters at 413. 418-27 alts of big., big-
 sw & w. on heavy sm. choc., red loam, & a little fine
 brown, with smaller stretches of ironbark on brown
 hard. 27-33 (Murgon) ironbark & ^{C. hemiphysalis} oval-leaved box on
 greasy-hard.

Summary, Sayndah - Murgon :- Much of the distance
 had mod. fav. alts. All hilly country, some mountains,
 but mostly cleared. Heavily grassed, although
 extremely dry.

(84 3/4) Very tall
 Murgon - Kingaroy :- 34-43 (Wondai) / nl. ironbark, ^{C. maculata} cabbage
^{C. hemiphysalis} & ^{leaf} box on mainly fine / red-brown & brown, a little hard
 pale brown.

largely cleared.

C. hemiphallois

Gently undulating country, 43-46 sl. bon, gum + ul.
 ironbark on firm brown, with small patches of heavy
 sm. dark grey along creek at 44. 46-47 Heavy sm. choc.
 with alts. + interstices of gum, ulah, bl. ironbark +
 sw. scrub. 47-49 Alts + interstices of heavy sm. choc. w. ulah,
 firm red-brown w. sl. bon + red loam w. sw. 49-55 alts.
 interstices of sw. or r.f. + euc., both on rich ^{loose} red loam.
 55-57 alts. interstices of bl. ironbark, ulah + ulah-r.f.
 on heavy sm. choc. + red loam 57-58 r.f. on red loam. 58-
 59 euc. on red loam (?) 59-61 r.f. on red loam 61-62 (Kunjin)
 euc. on red-brown.

(9465)

Kunjin - Nanango : - 63-69 bl. ironbark, ^{gum} ~~other~~ +
 wattle on brown + (mainly) deep red-brown firm + loose.
 69-70 r.f. on red loam. 70-74 gum + bl. ironbark on
 deep red-brown leading gradually to pale brown +
 finally to ~~sl.~~ ul. ironbark, sl. bon + cabbage ^{C. maculata (prob.)} at 74, 75
 gum on mod. heavy sm. dark grey on creek flat. 76-79
 (Nanango) gum, ul. + bl. ironbarks, cabbage on brown
 hard sandy.

Nanango - Yarraman : - 79-84 both ironbarks, cabbage +
 gum on hard pale brown. 84, transition through same
 timber on deep red-brown firm + loose to 84-86 r.f. on red
 loam, with occ. ^(in bottle since ca. Mundubberra) *Aracaria*. 86-93 (Yarraman) Rain forest

large dipterocarp.

on red loam, some very tall about 90-92. Occ. small patches of iron bark - gum on firm - hard brown.

(93) Garraman, Toogoolawah: - 93-96 tall unclered rain-forest w. numerous *Aracaria*, some of the tallest on pale firm, most on red loam or brown. 496-500 nl. iron bark, all rainforest on crowns of hills off road. ol. box & gum on pale hard, 500-503 (Blackbutt) tall rainforest w. *Aracaria* & silky oak on ^{hard} pale brown & pale red. 503-10 very tall, dense, ^{unclered} forest including ol. box, nl. iron bark & others on both red loam & firm - hard pale brown. 510-13 same, somewhat less tall, & includes ^{alternating} cabbage, on steeply sloping pale hard, with rain forest on same side. 13-18 ^(moore) Euc. only, much smaller, mainly cleared from 14, gum & nl. iron bark on firm - hard pale brown & grey. 18-36 nl. & nl. iron bark & gum on hard pale brown. Pasture much sparser than further N. app. mainly *Stipa* & *Danthonia*. Definitely a N.W. appearance. Patch of green - slightly sun along creek at 26. Just at Toogoolawah the valley suddenly widens & flattens, & a mod. sun dark grey alluvial soil appears.

Toogoolawah (8537) - Euc.: - 37-47 Both iron bark & ash & a little gum (open forest cleared) on pale brown hard with only occ. very small mod. sun grey patches round

cracks. 47-49 (Est) firm, greasy & slightly ~~new~~ brown & grey w. bl. iron bark vol. box. [The flattening at Trojostawak was purely local. The rest of the road to Est was hilly once more, hills not seen. Est is open again.

(549) Est - Ipswich: - 49-58 alts of hard, firm & slightly ~~new~~ brown w. small patches of mod. ~~new~~ grey. Both iron barks, cabbage, a little ash & gum. 58-69 same timber on pale hard, with a change to only firm on a crossing of the Brisbane R. 69-70 mod.-heavy ~~new~~ grey at another coming of fruit. 71-82 alts ^{largely uncleaned} ~~new~~ grey of pale hard, greasy & firm w. same timber, ft of box. dominant on firm & greasy. Patch of heavy ~~new~~ grey at creek at 75. 82. ~~new~~ Heavy ~~new~~ dark grey. 82-88 (Ipswich) Dense timber on ^{uncleaned} pale hard & until precincts of town are reached.

Summary, Murgon - Yarraman: - (1) first ¹² 9 miles from Murgon (~~to Yarraman~~) too light (2) 3 miles of possibly fav. alts. (3) 13 miles of prob. too uniformly heavy. (4) Kungahy - Nanango appears to have fairly fav. alts. but the role of red loam is really unknown, & the general appearance is not very fav. Same applies to Nanango - Yarraman, though the alts. are less fav. in this case. Uncleaned from ca. 6 miles.

(Phaulacridium atthous; Foggia at Ipswich.

77208

before Yarraman.

Summary, Yarraman - Ipswich: (1) For first 20 miles there are mod. fav. alts., assuming red loam to correspond to heavy, and assuming the timber cleared, which it is not. (2) from this point quite unfav. to Toogoolawah, though more fav. for out. than any light country seen for a long way, owing to sparser pasture. (3) Small patch of heavy country at Toog. (4) unfav. to Esk. (5) Esk to Ipswich contains a few patches of mod. fav. alts., but nothing much. Ipswich to Brisbane all pale whitish & yellowish hard, partly uncleared. Thus there is very little along the road boulders which would suggest that the Brisbane Valley could be an outbrian area - at any rate the part round Toog. & Esk.

(8644)
Ipswich - Gatton: - Esk turn-off. 50. 50-53 fine hard brown w. nt iron bark, of box & gum. 53-61 alts. & intergs. of fine-green brown and slightly - mod. sun. brown to choc., completely cleared, & heavily grassed. Original aq. a mixture of brig. & sw. scrub, w. all. Araucaria & silky oak. 61-63 alts of brig-sw. & auro (nt iron bark & sometimes cabbage ol. box, gum) on hard & some fine pale brown on northern Range. 63-72 med. - thick stem alts of auro &

brig. sw, with soil det. ~~from~~ firm-hard & slightly, red.
occ. heavy sm. choc. 72-79 ~~heavy sm. black choc.~~
plain with gum, but prob. also naturally treeless in
parts. Dec. lighter hard rises.

Gatton (8682) - Toowoomba: Gatton is on a firm-hard
red rise. 82-85 alts. of heavy sm. choc. & firm-hard
pale brown w. scattered mes. (same as before)
75-88 heavy sm. choc. plain (all the plain country
from Ipswich is under cult.) 88-94 (slightly sm. firm,
& mainly) greasy brown. Eucalypts, mainly gum ash-
694-702, hot-med. terr. alts. of firm-hard & sandy w.
nl. iron bark & cabbage and heavy sm. choc. black.
App. very far. 703-706 Toll Bar to Toow.

Toowoomba - Warwick: 8-12 red loam. 12-14 red-brown
loam. 14-27 heavy sm. ^{black &} choc., partly cultivated, partly
sparse pasture. Cleared from mainly nl. iron bark at
first, but from ca. 22 timber consists of occ. both
ironbarks, mainly the coolibah / nl. box / gum (?) typical
of the Downs. Rolling country, almost completely
cleared, no barriers. Dec. slightly firmer areas, but
the only really firm patch at 27 - red-brown firm-
hard. 28-29 return. 29-30 another firm choc. patch, less
firm than the other 30-57 return. From 32 we descend to
almost level plain, prob. naturally treeless. On the
rolling section there were occ. hills avoided by the

road, on whose slopes firm hard soil would prob. be found. 33-57 extensive, almost continuous alt. of wheats & oats & barley. Slight hills at 36-37, but practically no surface farming. Allora at 47.

Summary, Spowich-Toowoomba: - (1) For 9 miles hard, largely timbered, unfav. (2) Then 10 miles of slightly fav. but heavily grassed alts to our Marking Range (3) 9 miles of pretty fav. alts (4) 7 miles of heavy plain, inadequately broken up by occ. small light rises. This brings us to Gathon. (5) 3 miles of fav. alts (6) 3 miles of heavy plain (7) 6 miles of grassy (8) 8 miles of app. very fav. alts, bringing us to the bottom of the Toll Bar. Thus there are three stretches of fav. alts along this line: (a) ca. 19 miles of mod. fav. between the Marking Range & a point 7 miles from Gathon (b) 3 miles of fav. alts immediately E of Gathon; (c) the most fav. stretch, 8 miles westward from the bottom of the Toll Bar.

choc. red brown
firm patches at 51-52 & 57-60 alts & intgs. of firm heavy
(warwick)
m. choc. on hill. 61-63 / greasy - hard brown rice with
& red box.
pepper (fox. froggathia. One small patch of heavy m. choc.
(8766)
warwick Stanthorpe. Downs are left behind completely.
66-72 hard pale, brown & pale red, with a little greasy

at first. *N. imbricata*, gum, *N. bon.* & a little cabbage
dogwood round 77. Partly rung, giving open forest.
Troggathia. 92-801 unknown tall dense tree, with

umbrella growth on white sandy soil (pale grey under-
clears in patches only for orchards. (Stanthorpe)
with prob. a typical pod soil) h 801-805 / return.

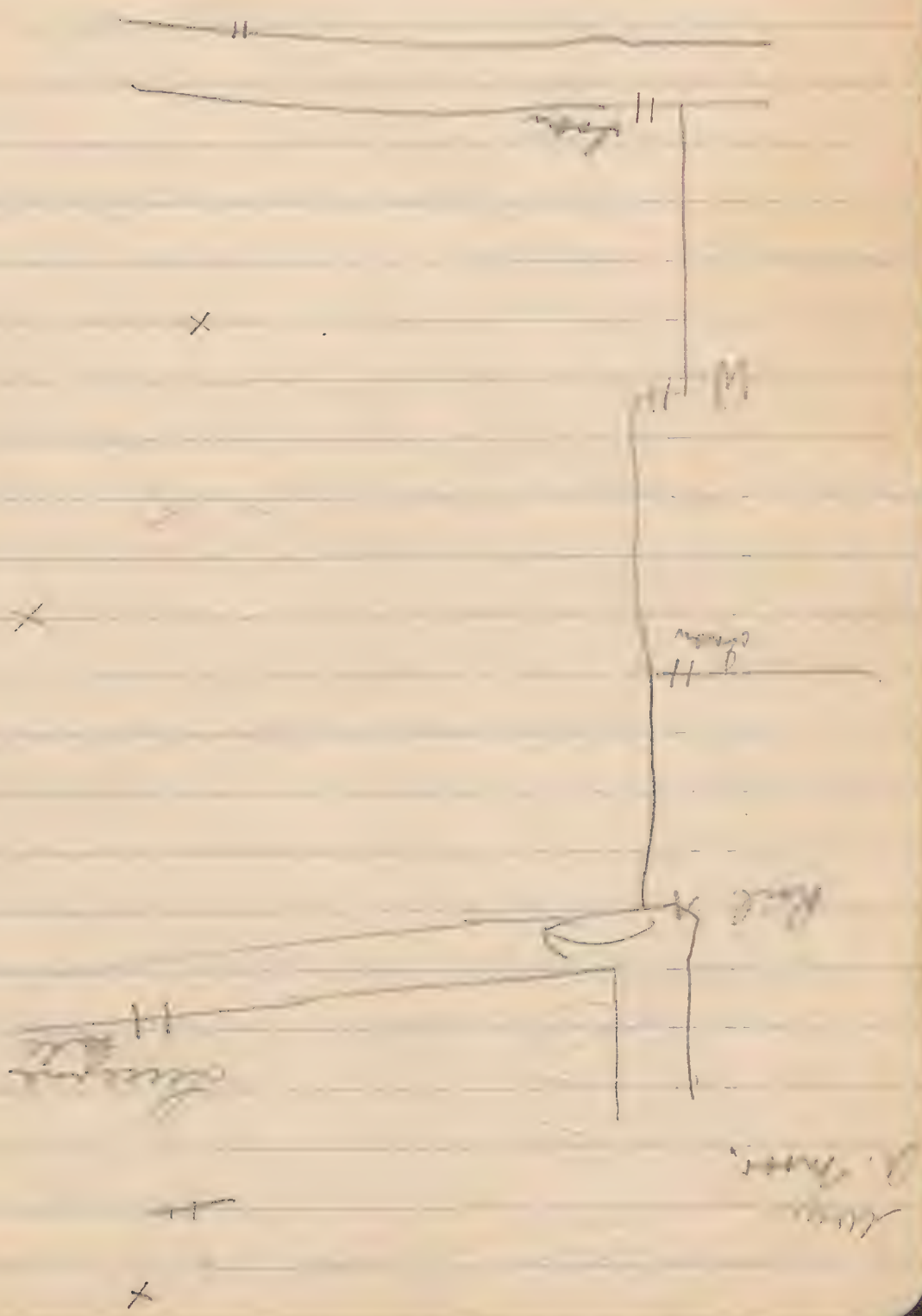
Stanthorpe - Wallangarra: - 805-820 ^{mainly} *umbrella* gum. h. ^{partly cleared}
bon on hard pale + white sandy with a little pine. (Wallangarra)

820-¹³⁰~~820~~ mainly *N. bon* on pale hard. 823-830 ^{stapes}
part of range. The section from Stanthorpe to
Wallangarra would most prob. be a barrier to
swarms crossing from N.W. to E.

(832)
Wallangarra to Tentersfield: 32-41 hard pale w. various
mostly cleared (Tentersfield.)
medium-sized spreading trees, 41-44 brown greasy,
completely cleared.

(44)
Tentersfield - Glen Innes: - 44-71 same, & other trees,
incl. umbrella, on hard & greasy brown, pale red & pale.
again 66-71
ca. 50-60, mainly uncleared in mountainous country.

69 Troggathia, heteropternis, *Monica* sp. (specimen) 71-88
mainly cleared to 79, ca. 50-55 thereafter
medium-sized spreading trees on mainly greasy pale brown
& grey-brown. Defurcate at 78. 88-99 ~~some~~ taller
timber on pale hard, mainly uncleared. 99-100: cleared.
901-903 (Glen Innes) Heavy gum dark grey with a little
transitional to firm.





(8905)

Glen Innes - Inverell: 5-9 short term alts. of firm brown & heavy sm. dark grey. 9-37 alts. + inters. of firm slightly sm. mod. sm. choc. & grey, with occ. patches of hard. Mostly firm & slightly sm. Almost completely cleared from G.D. Steep & long drop at 14-16 which would form a serious barrier, although not visible from ca. 18 there was very little alternation - a uniform firm - slightly sm. mod. sm. choc. in rolling hills & from ca. 29 almost the only country. from ca. 24 the dominant tree was an oak (white box?) leaves silvery etc. with bon bark. 37 patch of hard pale brown. 37-48 (Inverell) mod. term alts of greasy firm - slightly sm. red brown & mod. - heavy sm. dark grey. Same tree. Mostly grazing from G.D., but occ. cult. & consid. cult. in immediate neighbourhood of both towns.

(48)

Inverell, Warialda: 48-51 mod sm. choc. w. a few firm rais. 51-54 rich red brown greasy - firm 55-56 short mod. alts of firm red & mod sm. choc. 56-61 rich red brown / firm to sandy, ~~some~~ Acacia gutt. at 61. 62-69 (Delunga) mod. & (mainly) heavy sm. dark grey choc., with patch of consid. wheat from ca. 59, on gently rolling country. firm red brown at 63 & slightly sm. red brown at 69. 69-75 mod. term alts of heavy - mod sm. gb. , firm - greasy gb. & firm red brown. 75-77 heavy - mod. sm. gb. 77 patch of hard sandy pale brown w. bl. iron bark. Otherwise all s.o.b. box.

77-81 heavy-mod. sm. gl. with sol. box. 81-82
pale & pale brown sandy ricc w. bl. vul. ironbark,
cabbage, & a little pine 82-83 return. 83-87 (Warialda)
hard & sandy pale & pale brown w. both ironbarks,
cabbage & pine. occ. small patches (ca. 2) of
sol. box on more greasy patches.

⁸⁷⁾ Warialda-Bungara ⁸⁹ 87-90/3 alt. inters. of hard

greasy & fine pale, brown & red-brown w. extensive
& sol. box-pine
bl. ironbark, & sol. box on ~~greasy patches~~

~~pine & ironbark on harder parts.~~ After Pop. box at
Eucalyptus albens

ca. 90. *Fragaria* & sample of sol. box fruit at 96. Sol.

box is sitting longer & narrower leaves & more on. Most
of country from ca. 96 is strongly reminiscent of country
between Forbes & Katoomba round Tangle. sol. box-pine
replacing Pop. box-pine. Dubbo bushes frequent. Soil
appears to vary from 1-2 from ca. 96. Heavily timbered
hills (prob. ironbark & pine) to left of road along whole
distance from Warialda.

Bungara-Barabba : - 13-29 Same as before, though prob.
a bit paler brown, less red. Timbered hills on both sides
of road. A little of the purplish-brown found between Peak Hill
& Narromine. Dubbo bushes everywhere. 19-20 alt. w.

Pale grey-brown greasy-slightly sm. *C. tenuis* hoppers
quite common at 24. Quite a few green pick there. 29-24.2

Valley begins to close in towards 50. & at 29-30 road
 rises consid., & thereafter soil is somewhat paler &
 harder, trees closer, though intensity slight, & country
 more dissected. 44-46 alternations of above w. slightly
 sm. choc. 50, sample of ~~soil~~ ^{"Eucalyptus albens" (?)} nl. bon (green leaves) 46-51
 return 51-52 (Barabba) gray gb. along Manilla River.
Barabba-Manilla: 52-55 alt. of pale brown gray &
 grey slightly sm. 55-81 mainly nl. bon (as per sample)
 & ^{2nd} bon
 for gray brown & pale red [S. from Warialda nl. bon has
 pathy
 increasingly accompanied, now ~~mainly~~ replaced
 the very similar silver-leaved species.) Soil varying from
 app. good 1 to ca. 2. Occasional wheat from Warialda.
Manilla-Tamworth: (82) - Owing to light rain, soil observations
 will not be very reliable. 82-93 as before, largely wheat
 from 88. 93-101 alt. intergs. of firm-hard (as before) with
 firm & slightly sm. red-brown & brown. Almost flat plain from
 ca. 97. 101-103 Mod. sm. grey. 103-Tamworth, return.
Summary, Toowoomba-Warwick: - Very uniform
 heavy sm. black-choc. ~~plain~~ with very occ. firm rises.
 The road mainly avoids the hills, on whose slopes
 further firm, & possibly hard, soil probably occurs.
 Ca. 4 miles of alt. intergs. of firm & heavy precede
 the last 2 miles before Warwick, which are on

greasy-hard.

Summary, Warwick - Glen Innes: - Hard or sandy, with some greasy to within 2 miles of G.I. unchanged for most of distance from Stanthorpe to Wallangarra, ^(probably a barrier) and over certain stretches from Tenterfield to G.I. Quite unfav. for mult. Last 2 miles heavy sun.

Summary, Glen Innes - Warialda: - (1) For about first 13 miles, mod. fav. alts. with a steep drop at 7-11 miles which would form a serious barrier to eastward migration. (2) 19 miles of rather uniform heavy rolling country, prob. unfav. (3) 11 miles of prob. mod. fav. alts. to Inverell. (4) Inverell to 4 miles from Warialda, long-term, and some stretches of short-term alts of firm-hard & heavy. Prob. ~~mod.~~ mod. fav. (5) Last 4 miles hard & sandy.

Summary, Warialda - Tamworth: - There are prob. no effective alts. along this stretch, except possibly for ca. 5 miles from Tamworth.

Trip to Currahukula, Breeza, Curlew's & Gunnedah: -

Heavy soil is first encountered in any quantity ca. 8 miles E of Breeza, when some good alts with firm, greasy & hard rot occurs for several miles. Then comes a stretch of uninterrupted heavy choc. sun.

plain to Brezza, followed by further alts., & then a stretch of uniform red around Cudewis with some alternations appearing again towards Yummedah. The general impression was of extensive alternations ~~&~~ W of a point 8 miles E of Brezza. Chem. adults were ^{much} more numerous round a gully in the black soil plain than elsewhere in the district, although the plain at that time was providing extremely little shelter, while green feed consisted of couch more or less restricted to the gully.

(9300)
Tamworth Yummedah: - 300-307 brown, pale brown & red-brown, fine, greasy & hard, mainly greasy, with white box & some rd. box. Small patch of mod. sm. choc. at 304. 307.2-308.5 slightly sm. choc, mainly on a rise. 308.5-314.0 return. 314.0-315.3 alts. & intang. of brown greasy with gl. slightly sm. & red-b. slightly sm. 15.3-19.2 return. 19.2-20.5 pale gl. greasy 20.5 small patch choc. slightly sm. 20.5-21.0 return. 21.0-21.8 greasy-fine pale gl. with numerous elongated parallel puffs of mod-heavy Dec. myall. sm. choc. h (2 photos) 21.8-23 return. 23-26 pale gl. & pale red greasy-slightly sm., with tendency to puffs. Dec. myall. ~~Poplar~~ Poplar box appears at 23, replacing white box on

the lower country. 26-31 return. 31-35 (Carroll) med. - km.
 of gray-firm pale red & go. & mod. sm. choc. 35-46
 pale go. & pale brown greasy (ca. 4), slightly sm. in places,
 with pop. box & stringy bark (?). This stretch is along river, &
 is along flat. 46-48 (Gummedah) alt. of gray & slightly -
 mod. sm. choc. associated w. Moski River.

Gummedah - Mullalley. 48-63 firm - hard, mainly red,
 some brown, w. pop. box, white box, milga, ^{pine, & orange} buddah,
^{occ. Kurapong} ryanan offshoot & dominant. Soil often apparently O. Small

patches slightly sm. red-b. - choc. at 55, 59 & 61. 63-65 pop.

box, belah, myall, milga & buddah on slightly - mod.

sm. belah choc. 65-67 pop. box alone, w. occ. myall &

rosewood on gray - slightly sm. choc. 67-69 alt. of
 firm-hard red w. box-pine-milga etc., gray - slightly sm.
 pale red w. box-myall, & box on slightly sm. choc.

69-70 myall, milga, rosewood, buddah, on heavy sm.
 Choc. w. some rally-pollies, leading grad. to ^{71-72 (Mullalley)} alt. of
 firm-slightly sm. red w. box and slightly sm. red w.

milga-rosewood.

Mullalley - Tumbat Springs. - 72-73 firm - slightly sm. dark

red stony w. various small incs. 73-75 road runs
 along boundary of very extensive treeless plain on
 dark st. - choc., and stony firm red hill with ^{finger-like} ^{rosewood} incs. &

fine. This plain could be seen to left of road in last part
 of stretch from Gannedah. It extends towards Breeza,
 where it is app. separated from the eastern portion of the
 Lweispool Plains (Breeza Plain) by a group of hills. 75-78
 road runs across plain, which extends to great distance
 to SE., & for several miles to NW. Natural veg. a ^{tuffy} *Stipa*
 ("plains grass"?). fringed w. small rosewoods. Rally-polies
 along stock route. 78-79 fringe of hill w. white box & rosewood
 & much orange on firm strong red-choc. 79-80 return to heavy
 sm. gl.-choc. plain via small. 81-82 firm - slightly sm. red
 via w. white box 82-83 heavy plain 83-84 firm red rose. 83-85
 heavy plain, with hills to right at distance of 1-2 miles
 85-~~86~~⁸⁸ alk. of firm, greasy ^{88-91 (T.S.)} *Therapsid* sm. choc. with white
 box & rosewood, leading to white box-pine on firm-hard &
 greasy red & brown. 91-92 pale hard w. white box, nl. ironbark
 & pine. 92-93 white-box pine on firm red, & brown & gl. 93-94
 white box on gl. greasy. 95- hard red & pale brown w.
 pine, nl. ironbark & euc. 395-403 hard pale red w. nl. ironbark
 white box & pine for ca. 181.2 ms. Then very sandy pale red
 & pale w. nl. ironbark, white box, pine, stringybark, ^{apple}
 dogwood. All from 95 is practically flat, slightly raised
 above heavy plain ^{on left} which it skirts at short distance. Pruner
 at 401 Road from Pruner to Quinindi direct cuts across

plain, that to Bundella goes further south. 403-404 heavy
 sm. gb. (tongue of plain) 404-405 sandy pale with stringy ^(Bundella) apple, white cor, etc. 405-413 left turn across heavy sm. ^{dark gb.} ~~choc.~~
 plain. Change is very sudden. 413 transition through Rowood-
 wilga to 414-28 white cor(?) rosewood, a small kurralong
 & myall on rolling ~~country~~ ^{often} heavy sm. choc. ^{stony}, esp. on
^{somewhat firmer} fringes. Treeless plain at distance of several miles to left of
 road. Small treeless plains at 21-23 & 26, but these were
 possibly covered with myall previously. 28-31 firm ^{slightly sm.} ^{often} h
 rich red, ^{stony} w. white cor - kurralong. 31 alts of red
 slightly sm. & heavy sm. choc. plain, leading to 31-35 heavy sm.
 dark gb.-choc. treeless plain, fringed by apple, extending many
 miles N & S. 35-42 mod. & (mainly) heavy sm. choc. & some
 red, w. cor & kurralong. A little slightly sm. Altho on
 slopes of hills, plain to right. It is doubtful whether
 much firmer soil would be found higher on hills. 42-44
 small patch of pale sandy ^{condensing} plain. Stringy, apple,
^{extending mainly to left} pine. 42-45 heavy dark grey. plain. 46 patch of hard &
 sandy pale brown & pale w. stringy & pine. 46-48 ribbon,
 plain extending mainly to left but also for several miles
 to right. 48 firm pale choc. 49-58 good short turn alts of
 heavy sm. dark gb. with greasy gb.-choc. stringy & apple,
 with spin plain. Alb. particularly good for first few miles.

58 road runs along hard pale red hill side, w. white box-pine - stung. Heavy country to right. 59-62 (Quirindi) same light country, away from heavy.

⁽⁶³⁾ Quirindi - Murrumbidgee - 63-65 as before 65-67 mod. - heavy sun. dark gr. rolling hills. 67-72 greasy, hard pale gr. & ^{pale} red. 72-82 (top of line pool range) alt. & inters. of fine red-choc. & ^{slightly} mod. & (occ.) heavy sun. choc. range is cleared all along road, & though steep obviously would not form an absolute barrier. 82-86 (Murr.) fine & slightly sun. 86-91 fine & slightly sun. brown - choc. 91-98 pale greasy & fine-hard, w. same gums as before (white box-stung - gum) + occ. ul. ironbark. 498-503 fine & slightly sun. 503-509 fine-hard. 512 Scone. From ca. Murrumbidgee the hills are hard & pale & carry a pure stand of fairly open ul. ironbark. The heavier soil is on the flats. ~~509~~

⁵²¹ Scone - Murrumbidgee. 509- (520 ⁵²¹ & Sherburn) med. heavy. alt. of fine-hard ^{brown & red} & slightly - mod. sun. gr. - choc. w. white box, stung & ul. ironbark. 520-28 (Murrumbidgee) fine-hard ^{greasy} brown & red, heavier country to right towards river.

^(Singleton) Murrumbidgee - Singleton: 28-57 ⁽⁵²¹⁾ pale hard, cleared from ul. ironbark, some dogwood, & a little cabbage & other trees. Kelly country. One patch of slightly sun. choc. at 31.

Camichel & McKinstry at Kingaroy.

Several colonies of swarms were observed last season along the northern side of the Dividing Range on black soil flats along creeks. In one case swarms were observed crossing the range from the south, and the other infestations could have originated in the same way, since much of the range is open timber or cleared under Rhodes grass. Infestation point of crossing of observed swarms and situation of close timber which would probably be a barrier are indicated on map (by Camichel).



For 2-11 see material relating
to Bulletin 186 (Pl. 8(b))

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For 2-11 see material relating
to Bulletin 186 (Pl. 8(b))



2-10

Pure stands of the short
brigalow characteristic
of the dry areas, 18 miles
E of Roma.

7/10/40.

2-9

Curly mitchell grass on
very heavy dark brown-
black self-mulching
soil. Photo shows deep
acks in soil. 9 miles
of Roma.

5/10/40.

[Pl. 5(b) of Bull. 186, 1945]

3(t)

3(a)

2-8

Rolling downs of curly
mitchell grass on Fitzroy
Downs, 9 miles W of Roma.

5/10/40.

2-7

Almost pure stands of
lalah. on stony chocolate
soil, 38 miles E of
Mitchell.

5/10/40.

2-6

Pure stands of old myall,
5 miles E of Mitchell,
on soil 7.

4/10/40.

2-5

Mulga, on red sandy soil,
21 miles S of Charleville.

3/10/40.

2-4

21 Mulga, another
mulga-like tree, so
hakea, 12 miles S of
Charleville, red sandy soil.

3/10/40.

2-3

Typical poplar box, the
3rd. step in transition
from coolibah. Same
site as 2-2, 47 miles
N of Cumnulla.

3/10/40.

2-2

Typical Coolibah in
low-lying area, mod.
heavy light grey soil, 47
miles N of Cumnulla.

3/10/40.

2-1

Typical fringe of whitewood
& opening leopard-wood
to a 46 clay-pan, 39
miles N of Cumnulla.

3/10/40.

[Pl. 1(b) of Bull. 186, 1945]

Sidgea association,
ca. 20 miles N of Bourke

1/10/40.

Large whitewood
fringing large clay-pan
21 miles N of Cumnulla.

3/10/40.



For 2-11 see material relating
to Bulletin 186 (Pl. 8(b))

28

Poor "forest" country on hard whitish soil, with tall Callagnum, narrow-leaved iron bark & wattie.

18/10/40

29.

well-developed stands of soft-wood scrub, verging towards rain forest, 10 miles SE of Wandago, Q.

19/10/40.

2-12

Tropical savannah, with spreading brigalows, baobab, another tall tree, blue grass & galvanized rally-patch, 5 miles N of Taroom.

9/10/40

212

Close-up of border of puff & firm soil. The stick is ca. 9 ins. high. Very small plants to right of stick are clovers. 21 miles W of Tamworth.

26/10/40

211

creamy-firm pale grey-brown soil with numerous elongated parallel "puffs" of nodules to heavy self-mulching soil. Occasional myall. Grazed paddock. 21 miles W of Tamworth.

26/10/40.

210

Tall rain forest with *Aracaria*, 2 miles S of *Agarraman*, top of Brisbane Valley, Q.

19/10/40.

27

Grass trees, 9 miles S of Monto, Q.

17/10/40.

26

Bottle trees remaining from cleared soft-wood scrub. Rhodes grass. *A. guttulosa* numerous. Callide Valley, 18 miles S of Biloela.

17/10/40.

25.

Tree pear in brigalow scrub on hard brown soil 16 miles E of Quaringa, Q.

14/10/40.

24

Rank pasture, including blue grass & other spp., Peak Downs, 23 miles S of Clement, Australia. ^{gutt.} numerous.

12/10/40.

23

Group of *Macrozamia* (?) on hill slope, Maramba Downs, 18 miles E of Springsure.

11/10/40.

22

Heavy soil downs, with clumps of baobab. Blue grass 2-3 ft. high, 9 miles S of "Baobab Downs".

10/10/40.

21

Brigalow, wilga, bottle tree and undergrowth (transition between brig. & soft-wood scrub), on rather light chocolate soil, 15 miles N of Taroom.

9/10/40.

For 2-11 see material relating to Bulletin 186 (Pl. 8(b))